

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ST
LOUIS-SAN FRANCISCO RAILROAD AT O'HARA, OKLA., ON JANUARY
1, 1920.

February 11, 1920

On January 1, 1920, there was a head-end collision between two freight trains on the St. Louis-San Francisco Railroad at O'Hara, Okla., which resulted in the death of 1 employee and the injury of 6 employees. After investigation of this accident, the Chief of the Bureau of Safety reports as follows

The Arthur Sub-division of the Central Division of the St. Louis-San Francisco Railroad, on which this accident occurred, is a single-track line extending from Fort Smith Yard, Ark., to Hugo, Okla., a distance of 145.4 miles. Train movements over this sub-division are governed by time-table and train orders, no block signal system being in use

The timetable direction of trains is east and west. On the south side of the main track at O'Hara there is a passing track 3,196 feet long. About midway of the two passing track switches, both the main track and the passing track curve 1 degree to the left for westbound trains, the curve being 450 feet long and its western end being about 1,600 feet east of the west passing track switch. West of this curve, the track is tangent to the point of collision, a distance of about one mile. Approaching the point of accident from the west there is a 4-degree curve to the left about 1,300 feet in length, about 500 feet of tangent track and then a 4-degree curve to the right 1,388 feet long, the accident occurring at the eastern end of this curve. On account of a thick growth of trees on the inside of this curve, the vision of enginemen approaching the point of accident from the west is restricted to about 1,100 feet. Proceeding westward from the 1° curve at O'Hara the grade is descending to a point about 4,400 feet beyond the point of accident, varying from .33 per cent to 1.75 per cent. At the immediate point of accident the grade is 1 per cent. The weather at the time of the accident was clear and the moon was shining.

Westbound freight train No. 733 known as the Texas Fast Freight, is operated daily from Monette, Mo., to Hugo, Okla. On the day of the accident this train was in charge of Conductor Waldron and Engineman Gunn and consisted of engine 695, 21 loaded cars, 1 empty car and a caboose. It left Fort Smith Yard, the sub-division terminal, at 9.35 p. m., December 31st, 2 hours and 5 minutes late. At Wister, which is 38.4 miles west of Fort Smith Yard and 5.9 miles east of O'Hara, the crew received four train orders on Form 31. Train order No. 25, which was the only one directly involved in this accident, read as follows,

"To C. & E. No. 733 and No. 3, at Wister.
Eng. 696 run Extra Talihina to Yard.
No. 3 Eng. 713 wait at Wister 1.15 a.m.,
Caston 1.20 a.m., O'Hara 1.24 a.m., Folsom
1.29 a.m., Leflore 1.37 a.m., Bengal 1.46 a.m.
No. 733 wait at O'Hara 1.15 a.m., Folsom
1.23 a.m., Leflore 1.38 a.m. for extra 696
east."

Train No. 733 then left Wister at 12.50 a.m., January 1st, passed O'Hara between 1.06 and 1.09 a.m., from 6 to 9 minutes ahead of the time specified in train order No. 25, and while running at a speed of 25 or 30 miles per hour collided with eastbound freight train extra 696

Eastbound freight train extra 696 was in charge of Conductor Hamilton and Engineman Hammersly and consisted of engine 696, 7 empty coal cars and a caboose. This train left Hugo, its initial terminal, at 9.15 p.m., December 31st, and upon arrival at Talihina, 24.7 miles from O'Hara, at 11.55 p.m., the crew received train order No. 25, quoted above. The train left Talihina at 12.15 a.m. and between 1.07 and 1.10 a.m., collided with train No. 733 while traveling at a speed estimated at from 15 to 25 miles per hour

When the trains came to rest, engine 696 of train No. 733 lay on its left side, its front end was crushed in and it was otherwise badly damaged. The tender cistern was torn from its frame and came to rest on its left side jammed against the boiler head; the tender frame was demolished. The first car of train No. 733 came to a stop practically crosswise the track and was jammed against the head end of the engine of extra 696. The third car telescoped and demolished the second car. With the exception of the thirteenth car, which was knocked off center at its head end, the remainder of the train was practically undamaged. The engine of extra 696 came to rest in an upright position, badly damaged. The tank frame was jammed under the rear end of the engine, raising all the driving wheels off the rail, with the exception of the right front driving wheel. The first three cars telescoped each other, but remained upright, the remaining cars sustained no damage. The employee killed was Engineman Gunn, of train No. 733

Conductor Waldron, of train No. 733, stated that previous to leaving Fort Smith Yard a test of the air brakes on his train was conducted by air-brake inspectors, who reported that 21 brakes were operating while two were cut out, he did not know where these cars were located, but said that the caboose was not one of them. The air was working through from the engine to the caboose satisfactorily and no trouble was encountered in making stops between Fort Smith Yard and the point of collision. At Wister he had received four train orders, Nos. 25, 26, 201, and 27. He arranged these in the above order, and after reading them aloud to the engineman gave him a copy of each order and the engineman then read them back to him correctly. Leaving

Wister the conductor boarded the caboose and read the orders to the flagman, and then gave them to him. He stated that the train made no stops between Wister and the point of accident. When about a mile east of O'Hara he heard the engineman sound the station whistle signal, but he did not think the engineman sounded the meeting point whistle signal. At the time the station whistle was sounded, he looked at his watch and it was then 1.06-1/2 a.m. He was riding in the cupola of the caboose, on the left side, and on account of the ascending grade approaching O'Hara he was unable to see the western end of the siding and to know whether or not extra 696 had arrived. He then looked out of the window and when the caboose reached the top of the grade, near the middle of the passing track, he saw that extra 696 had not arrived. The speed of the train at this time was about 15 or 18 miles an hour and on seeing that the engineman was not going to stop he called to the flagman to open the conductor's emergency valve. As far as he could tell from the sound of the exhaust, the emergency valve was working normally, the caboose being filled with dust from the train line, but the speed of the train was not checked. He looked at his watch again, saw that it was 1.09-1/2 a.m., and shortly thereafter he saw the rays of the headlight of extra 696. At this time his caboose was about 10 car lengths west of the west switch or about 25 or 30 car lengths from the point at which the brakeman had opened the emergency valve. The brakes were then beginning to hold. The conductor estimated the speed at the time of the collision at 15 or 20 miles an hour. He said the collision occurred at 1.10 a.m., with a possible variation of 10 seconds either way. He attributed the failure of the emergency application of the brakes to check the speed of the train to the fact that the engine was equipped with an 11-inch pump which pumped the air into the train line as fast as the conductor's valve in the caboose drew it off. He last noticed the air gauge when the train passed Gaston, 2.5 miles east of O'Hara, at which time it showed a pressure of from 70 to 75 pounds.

Flagman Coomer, of train No. 733, stated that he understood train order No. 25 thoroughly and that his train was to wait at O'Hara until 1.15 a.m. Approaching O'Hara he was riding on the right side of the cupola. He heard the engineman sound the whistle but on account of the wind blowing, he was not sure whether the engineman sounded the meeting point whistle signal or merely the station whistle signal, although the steam he saw gave him the impression that the meeting point signal had been sounded. As the caboose passed over the top of the hill he asked the conductor, who had his head out of the window, if extra 696 had arrived, but did not hear him reply. He looked at his watch and then asked the conductor what time it was by his watch, the conductor made no reply to this question but told him to apply the brakes. Brakeman Coomer stated that he opened the conductor's valve when the caboose was about opposite the station sign board and looked at his watch again, it was then 1.09 a.m. He said that about one minute elapsed between the time he applied the brakes and the time of the collision and that the application

of the brakes had no effect on the speed of the train; in fact, the speed increased from the time the train started down the grade, and was about 20 or 25 miles an hour at the time of the accident. The distance from the station sign board to the point of collision was about 4,000 feet. If the caboose was opposite the sign board when the flagman opened the conductor's valve, then the engine was about 1,000 feet beyond, the train therefore traveled about 3,000 feet with the conductor's valve open.

Head Brakeman Ellinor, of train No. 733, stated that at some point between Wister and Caston he said to Fireman Elliott, "Wonder where we are going for No. 3," and the fireman replied that he did not know. Engineman Gunn then spoke up and said, "We will go over here in the woods some place for No. 3," leaving the brakeman under the impression that the engineman had not fully decided where they would wait for No. 3 to pass them. The engineman then handed him copies of three train orders which had been received at Wister and kept a fourth one which he seemed to be studying. The brakeman said that none of the three train orders that he saw mentioned waiting at O'Hara and he did not know the contents of the order which the engineman was studying until after the accident had occurred. He stated that at about the time the train reached the top of the grade at O'Hara, he handed the orders to the fireman to read, the engineman remarking very positively at about the same time that they had 30 minutes in which to reach LeFlore ahead of train No. 3. The brakeman then took the orders out of the fireman's hands and said, "I don't see anything on here about train No. 3 waiting," and the engineman replied that he had another order concerning train No. 3. The brakeman then handed the three orders to the fireman and the fireman read them, returning them to the engineman, who put all four orders into his pocket and then opened the throttle a little. He felt sure that the engineman continued to work steam until just before the collision occurred. Brakeman Ellinor further stated that the speed of the train as it started down the descending grade was 10 or 15 miles an hour and it increased as the train proceeded. Upon reaching a point about 2,500 feet beyond the west passing track switch the headlight of extra 696 came into sight around the curve and he shouted to the engineman to apply the brakes in emergency. The speed of the train was from 25 to 30 miles an hour, and it had not been noticeably reduced when he jumped from the engine about 3 car lengths from the point of collision. It was 1.10 a.m. when he looked at his watch about a minute after the accident. Brakeman Ellinor was unable to state definitely what whistle signals were sounded by Engineman Gunn when approaching O'Hara.

Fireman Elliott, of train No. 733, stated that at Wister, the engineman received four train orders which he read through to himself twice and then handed three of them to the brakeman, keeping the fourth one which he studied more carefully, seemingly for the purpose of figuring time on train No. 3. The brakeman, after reading the three orders, handed them to him and after he read them he returned them to the engineman, who remarked that

they would go to Caston for train No. 3. The engineman again read the fourth order to himself and said they could reach O'Hara ahead of train No. 3. The engineman also told them that he had a wait order on train No. 3, which was to wait at Wister until 1.15 a.m., and also at other points until certain specified times. The fireman stated that he did not see train order No. 25 at any time prior to the accident and did not know that it contained instructions to wait at O'Hara until 1.15 a.m. He said the engineman did not sound the meeting point whistle signal approaching O'Hara and he could not recall whether or not the station whistle was sounded. On reaching the top of the grade at O'Hara, at which time the speed was about 8 or 10 miles an hour, the engineman said that they had 30 minutes in which to reach LeFlore, 9.8 miles beyond O'Hara, for train No. 3. The speed of the train then increased until the brakeman shouted a warning on seeing the headlight of extra 696 appear around the curve. He stated that at no time did he feel the brakes being applied from the rear; they were applied in emergency by the engineman two or three car lengths east of a road crossing located about 150 feet east of the point of collision. Fireman Elliott estimated the speed at the time of the collision at 20 miles an hour, he did not look at his watch and was unable to give the exact time at which it occurred. He further stated that no trouble had been encountered in making stops and that as far as he knew the air brake system was operating properly.

Engineman Hammersly, of extra 696, stated that at Talihina his conductor delivered to him a copy of train order No. 25 and after reading it, he made some remark to the conductor about having sufficient time in which to reach O'Hara for train No. 733. After leaving Talihina he had no occasion to stop his train before reaching the point of accident. As his train was rounding the curve just west of the point of accident, he saw the reflection of the headlight of train No. 733 and thought at first that the opposing train was standing on the O'Hara passing track. Almost immediately the headlight came in sight and he at once applied the brakes in emergency and told his fireman and brakeman to jump, doing so himself when within about 4 car lengths of the point of collision. The first person he met after the accident was the flagman of his train, they compared time and he said their watches showed it to be 1.10 a.m. He thought the collision occurred at 1.07 or 1.08 a.m. Later in a conversation with Brakeman Ellinor, of train No. 733, he asked the brakeman if he did not have an order to wait at O'Hara and the brakeman replied that he did not know of his crew having any such order.

Fireman Armstrong, of extra 696, stated that he was putting in a fire at the time the engineman applied the brakes in emergency just before the collision occurred. He thought the speed of his train was about 20 miles an hour at the time of the collision, having been reduced about 10 miles an hour by the emergency application of the brakes. When he looked at his

watch after the accident it was 1.08½ or 1.09 a.m. and he figured that the accident occurred at 1.07 a.m. He saw Fireman Elliott of train No. 733 shortly after the accident and asked him if he did not have an order to wait until 1.15 a.m. at O'Hara, Fireman Elliott replying that he had seen no such order.

Head Brakeman Bryan, of extra 696, estimated the speed at the time of the collision at about 25 or 30 miles an hour. He stated that about 2 minutes elapsed from the time of the collision to the time he looked at his watch and it was then 1.09 a.m.

Conductor Hamilton, of extra 696, stated that he was riding in the cupola of the caboose approaching O'Hara. His first intimation of the accident was an emergency application of the brakes shortly after which he saw the headlight of train No. 733. He then jumped down from the cupola and out onto the ground, landing about even with where the caboose came to a stop. He thought the speed of the train when he first saw the headlight of the opposing train was about 30 miles an hour, but was reduced to 8 or 10 miles an hour when the collision occurred. He stated that he looked at his watch immediately after the accident and it was between 1.07 and 1.08 a.m.

Flagman Wilkerson, of extra 696, stated that the speed of the train at the time of the accident was about 30 miles an hour and according to his watch it was 1.07 a.m. when he got out of the caboose after the accident. He stated that when Engineman Gunn's body was removed from the wreckage four train orders were found in his pocket, order No. 25 being on top of the others. He said this order was distinct and could be easily read. Conductor Hamilton handed him Engineman Gunn's watch and he noticed that the watch showed 1.20. He said that he believes the watch was not running at that time, while afterwards it would run a short time and then stop. He did not remember comparing time with Engineman Hammersly.

Car Inspector Dorey at Fort Smith Yard stated that before the departure of train No. 733, he, with the assistance of Car Inspector Rains, made an air brake test of the train, finding the brakes on 21 of the 23 cars in working condition. The brakes on the caboose were inoperative, but he did not locate the trouble and did not know whether or not the brakes were cut out when the train departed. He could not recall the location of the other car with the defective brakes, as he kept no record of it. This defect, however, was due to excessive piston travel. He stated that the train had the required percentage of air brakes in operative condition and as he had received instructions from his foreman not to delay trains to make repairs when at least 90 per cent of the brakes were in operation, he made no adjustments on this train. Car Inspector Dorey further stated that in making his air brake test he did not go over the train after the brakes were released for the reason that it had never been the practice to do so on freight trains unless the engine-man had trouble in starting due to brakes sticking.

Master Mechanic Henry stated that he arrived at O'Hara at about 6.40 on the morning of the accident, at which time train No. 733 had been moved to the passing track at that point. He looked over the train for the purpose of detecting any angle cocks that might have been closed, but found all of them open, and the brake on the caboose was cut in. Later he made a very careful inspection and test of the emergency valve in this caboose and found it to be in proper working order.

Conductor Lewis and Engineman Paine, of extra 706, arrived at the scene of the accident at about 1.25 p.m. and hauled all except the first three cars and caboose of train No. 733 to Talihina. According to their statements the brakes on this portion of the train were operating satisfactorily at that time, and they had the train under perfect control, even while descending Winding Stair Mountain, which has a maximum grade of 2 per cent.

Both engines involved in this accident were of the 4-6-0 type, each weighing 330,700 pounds, and each was equipped with an electric headlight. They were also equipped with New York D-3 brake valves and New York No. 5 air pumps. The investigation showed that the air brake equipment on both engines was in proper working condition at the time of the collision.

On January 7th the caboose of train No. 733 was placed on the rear end of a train of 10 freight cars, no changes or repairs having been made to the conductor's valve. After the engine had fully charged the train line, the conductor's emergency valve was opened while the engineman's brake valve was in the running position. It was found that the train brakes immediately applied in emergency and remained applied.

This accident was caused by the failure of train No. 733 to wait at O'Hara until 1.15 a.m. for extra 696, as required by train order No. 25, for which Engineman Gunn is primarily responsible.

The evidence indicates that Engineman Gunn failed to sound the meeting point whistle signal approaching O'Hara, as provided for by rule No. 14-p, which requires that one long and one short blast of the whistle shall be sounded by the engineman, after the station whistle, to indicate to the train crew that time-card restrictions or train orders to be executed at that station have not been forgotten. While his watch had stopped at 1.20 a.m., it is not believed that it was incorrect at the time of the accident, in view of the statement of the head brakeman that Engineman Gunn said they had 30 minutes in which to reach LeFlore ahead of train No. 3. Train No. 3 was due to leave LeFlore on its wait order at 1.37 a.m., and the engineman's statement would indicate that his watch then showed the time to be 1.07 a.m., which was approximately correct. The statements of the head brakeman and fireman indicate that Engineman Gunn had been studying the order, and it is believed that his mind was concentrated on that part of the order pertaining to train No. 3, and that in some manner

he entirely overlooked that part of the order which required his train to wait at O'Hara until 1.15 a.m. for extra 696. According to the evidence, Engineman Gunn neglected to show the train order involved in this case to the fireman and head brakeman, as required by the rules, and they had no knowledge that their train was required to wait at O'Hara until 1.15 a.m. for extra 696 east.

Conductor Waldron stated that the emergency valve was opened as soon as the caboose reached a point where he could see that the opposing train had not arrived, but that the brakes did not seem to take hold until just before the collision occurred. The evidence indicates that the brakes were tested before the train left Fort Smith, the train crew being advised of the number of brakes operative and inoperative, while according to the statements of the crew the brakes had been working satisfactorily in making previous stops en route from Fort Smith to O'Hara. The conductor's statement as to the exhaust from the emergency valve indicates that the train line was properly coupled throughout the train, and examination of the train line after the accident also showed that all angle cocks were open, while early in the afternoon the undamaged portion of the train was hauled without difficulty on a two per cent descending grade. All of these facts point to the conclusion that the brakes were in proper working order, and either that the conductor and flagman were mistaken as to the location of the caboose at the time the flagman opened the conductor's valve, or that the conductor's valve was opened slowly and the air supplied to the brake pipe on the engine was sufficient to result in delaying an effective application of the brakes following the opening of the conductor's emergency valve. However, it is believed that had the conductor's valve been opened any considerable period of time before the collision occurred, there would have been sufficient effect from the application to attract the attention of the engineman. The evidence indicates that Conductor Waldron did attempt to apply the brakes when he became aware that the engineman was disregarding the wait order.

This accident again calls attention to the inherent weakness of the timetable and train-order system of operation, and directs attention to the necessity for increased protection afforded by the block system.

Engineman Gunn commenced work on the St. Louis-San Francisco Railroad as an engineman in December, 1903, while Conductor Waldron was employed as a conductor in November, 1906. The records of both of these employees were clear.

At the time of the accident the crew of train No. 733 had been on duty about 4 hours and 25 minutes after an off-duty period of about 20 hours and 15 minutes. The crew of extra 696 had been on duty 4 hours and 55 minutes, after an off-duty period of 12 hours and 5 minutes.